Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Army										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 3: *Advanced Technology Development (ATD)*				R-1 ITEM NOMENCLATURE PE 0603710A: *NIGHT VISION ADVANCED TECHNOLOGY*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	81.157	39.912	42.414	-	42.414	40.727	41.523	42.933	43.410	Continuing	Continuing
K70: *NIGHT VISION ADV TECH*	33.855	24.491	25.767	-	25.767	24.076	25.257	25.375	25.517	Continuing	Continuing
K73: *NIGHT VISION SENSOR DEMONSTRATIONS (CA)*	32.132	-	-	-	-	-	-	-	-	Continuing	Continuing
K86: *NIGHT VISION, ABN SYS*	15.170	15.421	16.647	-	16.647	16.651	16.266	17.558	17.893	Continuing	Continuing

Note

FY10 funding increase for higher priority efforts.
FY12 funding increase for Sensor Fusion Technology demos.

A. Mission Description and Budget Item Justification

This program element (PE) matures and demonstrates sensor technologies that increase Warfighter survivability and lethality by providing sensor capabilities to acquire and engage targets at longer ranges in complex environments and operational conditions (e.g. day/night, obscured, smoke, adverse weather). This PE pursues technologies that improve the Soldier's ability to see at night, provide rapid wide area search, multispectral aided target detection (AiTD), and enable passive long range target identification (ID beyond threat detection) in both an air and ground test-beds (project K70). This PE also matures and evaluates sensors and algorithms designed to detect targets (vehicles and personnel) in camouflage, concealment and deception from airborne platforms, and provides pilotage and situational awareness imagery to multiple pilots/crew members independently for enhanced crew/aircraft operations in day/night/adverse weather conditions (project K86). Project K73 funds congressional special interest items.

The cited work is consistent with the Director, Defense Research and Engineering Strategic Plan, the Army Modernization Strategy, and the Army Science and Technology Master Plan.

Work in this PE is fully coordinated with efforts in PE 0602709A (Night Vision and Electro-Optics Technology), PE 0602712A (Countermine Systems), PE 0602270A (Electronic Warfare Technology), PE 0602120A (Sensors and Electronic Survivability), PE 0603606A (Landmine Warfare and Barrier Advanced Technology), PE 0603774A (Night Vision Systems Advanced Development), PE 0604710A (Night Vision Systems Engineering Development) and PE 0603005A (Combat Vehicle and Automotive Advanced Technology).

Work in this PE is performed by the Army Research, Development, and Engineering Command (RDECOM)/Communications-Electronics Research, Development, and Engineering Center (CERDEC) /Night Vision and Electronic Sensors Directorate (NVESD), Fort Belvoir, VA.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Army								DATE: February 2011			
APPROPRIATION/BUDGET ACTIVITY 2040: *Research, Development, Test & Evaluation, Army* BA 3: *Advanced Technology Development (ATD)*				R-1 ITEM NOMENCLATURE PE 0603710A: *NIGHT VISION ADVANCED TECHNOLOGY*				PROJECT K73: *NIGHT VISION SENSOR DEMONSTRATIONS (CA)*			
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
K73: *NIGHT VISION SENSOR DEMONSTRATIONS (CA)*	32.132	-	-	-	-	-	-	-	-	Continuing	Continuing

A. Mission Description and Budget Item Justification

Congressional Interest Item funding for Night Vision advanced technology development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: Hyperspectral Sensors for Improved Force Protection (Hyper-IFP) ***Description:*** This is a Congressional Interest Item. ***FY 2010 Accomplishments:*** Integrated and tested an upgraded shortwave infrared hyperspectral system into the Cerberus architecture/platform.	1.591	-	-
Title: Brownout Situational Awareness Sensor ***Description:*** This is a Congressional Interest Item. ***FY 2010 Accomplishments:*** Matured real-time 3-D ground imagery to helicopter pilots in brownout landing and takeoff conditions (including lateral drift sensing with visual quantification and audible warning).	2.388	-	-
Title: Night Vision Advanced Technology Research ***Description:*** This is a Congressional Interest Item. ***FY 2010 Accomplishments:*** Developed and demonstrated combined midwave and longwave infrared sensor capabilities for the: Q2 airborne turret; hyperspectral sensors for tagging, tracking, and locating technologies that supported the concepts to track terrorists over a wide area once they have been identified; persistent imaging concepts for unmanned/unattended platforms; a thermal imager that can be clipped on to existing image intensifier goggles to provide dismounted forces an IR search capability while retaining night vision capability; development of a 1280 x 1024 pixel Short Wave IR (SWIR) camera with 15 micron pixels and miniaturized camera electronics; provided improved Compact Airborne Spectral Sensor (COMPASS) with enhanced real time processing of collected data as well as a man-portable ground-to-ground sensor package. Developed hyperspectral sensor for single airborne sensor system to be used with a variety of targets.	8.953	-	-
Title: Smart Sensor Supercomputing Center	7.958	-	-